

**AGENDA**  
**DHCD Workgroup #3**  
**2012 USBC International Residential Code**  
**June 14, 2012 - 9:30 a.m. - 3:30 p.m.**

Location: Virginia Housing Center

**Lunch Provided by Reservation Only:**

Contact Janice Firestone at [janice.firestone@dhcd.virginia.gov](mailto:janice.firestone@dhcd.virginia.gov) or 804-371-7150

**Meeting Agenda**

1. Introductions
2. 2012 USBC Regulatory Schedule and Public Hearings
3. 2009 USBC/IRC Technical Amendments retain, amend or delete
4. 2012 IRC
  - Wall bracing simplify
  - Window sills
  - Veneers
  - Duct lengths
  - Southern Pine
  - Stone footings
  - Deck guards
  - Defective drywall
  - Conditioned crawl spaces
  - Open porches
  - Attic and hatch insulation R-46
  - IRC energy trade-offs
  - Bed and Breakfast occupancy load
  - Habitable attic
  - Fuel gas CSST
  - HVAC manual J and heat pump thermostats
  - Arc-fault devices
  - 2015 code changes
  - Other technical code changes
5. New business
6. Next meeting
7. Adjournment

VIRGINIA DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT  
DIVISION OF BUILDING AND FIRE REGULATION

Code Change Form for the 2012 Code Change Cycle

Code Change Number: \_\_\_\_\_

Proponent Information

(Check one): ☐ Individual ☐ Government Entity ☒ Company

Name: Jim Harrell

Representing: Blue Ridge Masonry Association

Mailing Address: 120 Wood Pine Drive, Stoneville, NC 27048

Email Address: jharrell@triad.rr.com

Telephone Number: (336)548-5815

Proposal Information

Code(s) and Section(s): IRC R1001.8

Proposed Change (including all relevant section numbers, if multiple sections):

Smoke chamber walls shall be constructed of *solid masonry* units, hollow masonry units grouted solid, stone or concrete. The total minimum thickness of front, back and side walls shall be 8 inches (203mm) of *solid masonry*. When the inside surface of the smoke chamber is formed by corbelled masonry, ~~t~~The inside surface shall be parged smooth ~~with refractory mortar conforming to ASTM C 199.~~ When a lining of firebrick at least 2 inches (51mm) thick, or a lining of vitrified clay at least 5/8 inch (16mm) thick is provided, the total minimum thickness of front, back and side walls shall be 6 inches (152mm) of *solid masonry*, including the lining. Firebrick shall conform to ASTM C 1261 and be laid with medium duty refractory mortar conforming to ASTM C 199. Vitrified clay linings shall conform to ASTM C 315.

Supporting Statement (including intent, need, and impact of the proposal):

The noted Section is inconsistent with Section R1001.5 in regards to standard masonry wall thickness for fireplaces, which are typically exposed to more extreme temperatures. Safety is assured with the minimum thickness of solid masonry prescribed. Nonaqueous mortars are not practical for applying in the thicknesses required for constructing and parging the smoke chamber. Refractory mortar is not a readily available product which adds considerable cost and inconsistent enforcement, without the benefit of increasing the level of safety from historically proven industry standard practices.

Submittal Information

Date Submitted: March 20, 2012

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The proposal may be submitted by email as an attachment, by fax, by mail, or by hand delivery.

Please submit the proposal to:

DHCD DBFR TASO (Technical Assistance and Services Office)  
Main Street Center  
600 East Main Street  
Richmond, VA 23219-1321

Email Address: [taso@dhcd.virginia.gov](mailto:taso@dhcd.virginia.gov)

Fax Number: (804) 371-7092

Phone Numbers: (804) 371-7140 or (804) 371-7150



VIRGINIA DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT  
DIVISION OF BUILDING AND FIRE REGULATION

**Code Change Form for the 2012 Code Change Cycle**

Code Change Number: \_\_\_\_\_

Proponent Information

(Check one): ☐ Individual ☒ Government Entity ☐ Company

Name: Stephen Turchen

Representing: Virginia Building & Code Officials Association

Mailing Address: Suite 316 / 12055 Government Center Parkway, Fairfax, VA 22035

Email Address: Stephen.turchen@Fairfaxcounty.gov

Telephone Number: 703-324-1653

Proposal Information

Code(s) and Section(s): 2012 IECC Section C405.6

Proposed Change (including all relevant section numbers, if multiple sections):

Change Section C405.6 as shown:

C405.6 Exterior lighting (Mandatory). ~~Where the power for exterior lighting is supplied through the energy service to the building,~~  
All exterior lighting, other than low-voltage landscape lighting, shall comply with Sections C405.6.1 and C405.6.2.

Exception: Where approved because of historical, safety, signage or emergency considerations.

Supporting statement:

The proposal would have the IECC apply to all exterior lighting, rather than just exterior lighting fed from the electric service of the building. This would eliminate the loophole of using a separate service for the exterior lighting and thereby not have it subject to the code.

Submittal Information

Date Submitted: \_\_\_\_\_

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Please submit the proposal to:

DHCD DBFR TASO (Technical Assistance and Services Office)  
600 East Main Street  
Suite 300  
Richmond, VA 23219

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DIVISION OF BUILDING AND FIRE REGULATION

Code Change Form for the 2012 Code Change Cycle

Code Change Number: \_\_\_\_\_

Proponent Information

(Check one): ☐ Individual ☐ Government Entity ☐ Company

Name: Matt Westheimer

Representing: VBCOA Energy Committee

Email Address: tmwestheimer@co.hanover.va.us

Telephone Number: (804) 365-6344

Proposal Information

Code(s) and Section(s): VCC (IECC Section R402.4.2 and Table 402.4.1.1)

Proposed Change (including all relevant section numbers, if multiple sections):

Change Section R402.4.2 and the last row of Table 402.4.1.1 as shown:

R402.4.2 Fireplaces. New wood-burning fireplaces shall be provided with outdoor combustion air and shall have gasketed doors or tight-fitting flue dampers and outdoor combustion air.

Table R402.4.1.1

Fireplace	An air barrier shall be installed on fireplace walls. Fireplaces shall have gasketed doors <u>or tight-fitting flue dampers.</u>
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Supporting Statement (including intent, need, and impact of the proposal):

The proposal is to permit fireplaces to either have gasketed doors or tight-fitting dampers to accommodate common practice in both site-built masonry fireplaces and factory-built fireplaces. Either method will satisfy energy conservation goals.

Submittal Information

Date Submitted: 3/21/12

The proposal may be submitted by email as an attachment, by fax, by mail, or by hand delivery.

Please submit the proposal to:

DHCD DBFR TASO (Technical Assistance and Services Office)  
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Suite 300  
Richmond, VA 23219

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Email Address: tmwestheimer@co.hanover.va.us

Telephone Number: (804) 365-6344

Proposal Information

Code(s) and Section(s): VCC (IECC Table 402.4.1.1)

Proposed Change, (including all relevant section numbers, if multiple sections):

Add a footnote to Table 402.4.1.1 as shown:

TABLE R402.4.1.1  
AIR BARRIER AND INSULATION INSTALLATION

COMPONENT	CRITERIA <sup>a,b</sup>
(no change to table)	

a. In addition, inspection of log walls shall be in accordance with the provisions of ICC-400.

b. Structural integrity of headers shall be in accordance with the International Residential Code.

Supporting Statement (including intent, need, and impact of the proposal):

The added footnote clarifies that while headers are subject to the energy provisions, they are also subject to the residential code for structural design.

Submittal Information

Date Submitted: 3/21/12

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Code Change Number: \_\_\_\_\_

Proponent Information

(Check one): ☐ Individual ☒ Government Entity ☐ Company

Name: Stephen Turchen

Representing: Virginia Building & Code Officials Association

Mailing Address: Suite 316 / 12055 Government Center Parkway, Fairfax, VA 22035

Email Address: Stephen.turchen@Fairfaxcounty.gov

Telephone Number: 703-324-1653

Proposal Information

Code(s) and Section(s): 2012 IECC Sections C402.4.5.2 and C403.2.4.4

Proposed Change (including all relevant section numbers, if multiple sections):

**C402.4.5.2 Outdoor air intakes and exhausts.** [Add the following exception:]

**Exceptions:**

3. Any grease duct serving a Type I hood installed in accordance with International Mechanical Code, Section 506.3, shall not be required to have a motorized or gravity damper.

**C403.2.4.4 Shutoff damper controls.** [Add the following exception:]

**Exceptions:**

3. Any grease duct serving a Type I hood installed in accordance with International Mechanical Code, Section 506.3, shall not be required to have a motorized or gravity damper.

Supporting statement:

These two IECC provisions potentially conflict with the IMC. With few current exceptions, the IECC tries to ensure that every duct or shaft that connects the (conditioned) interior of a commercial building to the (unconditioned) exterior have a damper installed that will prevent unwanted infiltration of outside air. In all cases under the IBC and IMC (except for this one), the open shaft or duct can have an air infiltration damper installed at or near the thermal envelope boundary without compromising health or life safety. However, for grease ducts ventilating Type I hoods installed under the IMC, IMC Section 506.3.7 specifically states, in part, *Duct systems serving a Type I hood shall be constructed and installed so that grease can not collect in any portion thereof ...* An air damper assembly would provide one or several surfaces on which grease could collect. The proposed revisions will avoid potential conflicts between the IECC and IMC and alleviate individual code officials from having to individually interpret this issue. Impact of the change will be to ensure the safety and integrity of grease duct installations.

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Name: Matt Westheimer

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Telephone Number: (804) 365-6344

Proposal Information

Code(s) and Section(s): VCC (IECC Section C402.4.8)

Proposed Change (including all relevant section numbers, if multiple sections):

Change Section C402.4.8 as shown:

C402.4.8 Recessed lighting. Recessed luminaires installed in the building thermal envelope shall be sealed to limit air leakage between conditioned and unconditioned spaces. All recessed luminaires shall be IC-rated and labeled as having an air leakage rate or not more 2.0 cfm (0.944 L/s) when tested in accordance with ASTM E 283 at a 1.57 psf (75 Pa) pressure differential. All ~~recessed~~ luminaires installed in the thermal envelope shall be sealed with a gasket or caulk between the housing and interior wall or ceiling covering.

Supporting Statement (including intent, need, and impact of the proposal):

Recessed lighting which is installed in conditioned space should not have to be sealed.

Submittal Information

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Telephone Number: (804) 365-6344

Proposal Information

Code(s) and Section(s): VCC (IECC Section R402.3.6)

Proposed Change (including all relevant section numbers, if multiple sections):

Delete Section R402.3.6 in its entirety as shown below:

~~R402.3.6 Replacement fenestration. Where some or all of an existing fenestration unit is replaced with a new fenestration product, including sash and glazing, the replacement fenestration unit shall meet the applicable requirements for U-factor and SHGC in Table R402.1.1.~~

Supporting Statement (including intent, need, and impact of the proposal):

While Section R402.3.6 is addressing alterations to existing buildings and would be deleted due to Chapter 1 of the Virginia Construction Code anyway, deleting it in the IECC will make it clear that it cannot be applied.

Submittal Information

Date Submitted: 3/21/12

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Email Address: Stephen.turchen@Fairfaxcounty.gov

Telephone Number: 703-324-1653

Proposal Information

Code(s) and Section(s): 2012 IECC Section C402.1.1

Proposed Change (including all relevant section numbers, if multiple sections):

**C402.1.1 Insulation and fenestration criteria.** [Revise last sentence only as follows:]

The thermal envelope of buildings with a vertical fenestration area or skylight area that exceeds that allowed in Table C402.3 shall comply with the building envelope provisions of ANSI / ASHRAE / IESNA 90.1 the maximum area allowed under Sections C402.3.1, C402.3.1.1, or C402.3.1.2, as applicable, shall be evaluated using a software tool as indicated in Sections C407.6, C407.6.1, and C407.6.2.

Supporting Statement (including intent, need, and impact of the proposal):

This change clarifies two important issues when evaluating thermal envelopes of commercial buildings. The prescriptive requirements of thermal envelopes are limited by vertical fenestration area and skylight area. However, these limits are not defined by Table C402.3, but rather in the code language of Sections C402.3 and its sub-sections. Assuming that vertical fenestration and skylight areas are within the allowable limits of the code text, then the prescriptive values of Table C402.3 can be applied. The more critical issue is how to proceed if the stated limits are exceeded. The current paragraph directs the user to building envelope provisions of ASHRAE Standard 90.1; see Section 5 of that standard. Presumably the current IECC intent is that 90.1 / Section 5 be used in lieu of IECC Section C402. This intent conflicts with **C401.2 Applicability**, which tells the IECC user to, effectively, use either the IECC in its entirety or Standard 90.1 in its entirety for commercial buildings; see options 1 and 2 under C401.2. The proposal addresses this potential conflict by directing the IECC user to certain sub-sections of IECC Section **C407 Total Building Performance**. The cited sections under C407.6 allow the user to employ an envelope analysis tool that has been approved by the building official under C407.6.1 ("limited scope"), without getting involved in the more complex full building performance analysis discussed in all of C407. Note that by not directing the IECC user to Section C407 when fenestration / skylight areas are exceeded, another potential conflict with Section C401.2 (Option 3) is also avoided. Impact of the change will help ensure that both designers and code officials have a well-defined enforcement path for all thermal envelope situations in commercial buildings, and that such enforcement will be more uniformly implemented throughout the State.

## Submittal Information

Date Submitted: \_\_\_\_\_

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Email Address: Stephen.turchen@Fairfaxcounty.gov

Telephone Number: 703-324-1653

Proposal Information

Code(s) and Section(s): 2012 IECC Sections R202 and C202

Proposed Change (including all relevant section numbers, if multiple sections):

Change the definition of "Building thermal envelope" in Sections R202 and C202 as shown:

**BUILDING THERMAL ENVELOPE.** The basement walls, exterior walls, floor, roof, and any other building elements that enclose conditioned space or provides a boundary between conditioned space and exempt or unconditioned space. Unconditioned space shall include those buildings or spaces adjacent to a conditioned space that may not be heated or cooled for extended periods of time, such as adjacent townhouses or adjacent tenant spaces, due to periods of non-occupancy.

Supporting statement:

The proposed change is intended to ensure that the thermal envelope boundary will include the separation between a conditioned space and those spaces which have a reasonable expectation of being unoccupied (and therefore unconditioned) for a significant albeit temporary period of time. Typical residential building example is an occupied townhouse that is adjacent to an unoccupied townhouse. Typical commercial building example is a tenant space that is adjacent to a vacant or simply undeveloped tenant space. If the common wall between the townhouses or between the tenant spaces is uninsulated, there will be unnecessary heat transfer across that boundary. The proposal will prevent this situation from developing.

There may be cost impacts of this proposal, but they are difficult to gauge. Townhouses required "rated" separations which may include insulating materials that could also satisfy the wall R-value requirement. Common townhouse construction practice is to build a stud wall on the inside of the rated wall, which could be filled with materials with the required R-value. Tenant demising walls are not commonly insulated for energy conservation or to achieve a fire rating, but ARE sometimes insulated for sound transmission attenuation. Sound insulation can serve double duty as an energy insulating product if it meets the required R-value of Table C402.2.

Submittal Information

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Proponent Information

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Name: Stephen Turchen

Representing: Virginia Building & Code Officials Association

Mailing Address: Suite 316 / 12055 Government Center Parkway, Fairfax, VA 22035

Email Address: Stephen.turchen@Fairfaxcounty.gov

Telephone Number: 703-324-1653

Proposal Information

Code(s) and Section(s): 2012 IECC R403.1.1

Proposed Change (including all relevant section numbers, if multiple sections):

**R403.1.1 Programmable thermostat.** ~~Where the primary heating system is a forced air furnace, at least one thermostat per~~ The thermostat controlling the primary heating or cooling system of the dwelling unit shall be capable of controlling the heating and cooling system on a daily schedule to maintain different temperature set points at different times of the day. [Remainder of paragraph unchanged.]

Supporting Statement (including intent, need, and impact of the proposal):

This suggested change recognizes that forced air heating and air conditioning systems are not the only systems that may benefit from programmable thermostats. Hydronic, radiant electric, and solar thermal systems could also be programmed for night or "unoccupied" setback periods. The proposal concurrently clarifies that the primary heating or cooling system, at minimum, is the system that should receive the programmable thermostat. This clarification is necessary for those residential dwelling units that have multiple systems; e.g., first floor / second floor forced air systems, or radiant electric systems with thermostats in each room. Which system must have a programmable thermostat? It is the "primary" system, typically the one serving the largest area of the dwelling, but subject to reasonable interpretation by the Building Official. Impact of this proposal may be to reduce installation of unnecessary programmable thermostats in multiple H/AC systems.

Submittal Information

Date Submitted: \_\_\_\_\_

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VIRGINIA DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT  
DIVISION OF BUILDING AND FIRE REGULATION

**Code Change Form for the 2012 Code Change Cycle**

Code Change Number: \_\_\_\_\_

Proponent Information

(Check one): ☐ Individual ☐ Government Entity ☐ Company

Name: Bruce Cornwall

Representing: VBCOA Energy Committee

Mailing Address: 302 N Main St., Culpeper, VA 22701

Email Address: bcornwall@culpepercounty.gov

Telephone Number: (540) 727-3444, Ext. 387

Proposal Information

Code(s) and Section(s): VCC (IECC R402.4.1.2.1)

Proposed Change (including all relevant section numbers, if multiple sections):

Add new Section R402.4.1.2.1 to the 2012 IECC to read as follows:

R402.4.1.2.1 Visual inspection option. Field verification by visual inspection of the items listed in Table 403.4.2, applicable to the method of construction, shall be an acceptable alternative to complying with Section R402.4.1.2.

Supporting Statement (including intent, need, and impact of the proposal):

A thorough visual inspection of the air sealing done before drywall will be more cost effective and save more energy than air sealing done after a failed blower door test.

Submittal Information

Date Submitted: 3/15/12

The proposal may be submitted by email as an attachment, by fax, by mail, or by hand delivery.

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Name: Stephen Turchen

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Telephone Number: 703-324-1653

Proposal Information

Code(s) and Section(s): 2012 IECC R402.2.1

Proposed Change (including all relevant section numbers, if multiple sections):

**R402.2.1 Ceilings with attic spaces.** When Section R402.1.1 would require R38 in the ceiling, installing R30 over 100% of the ceiling area shall be deemed to satisfy the requirement for R38 whenever the full height of uncompressed R30 insulation extends over the wall top plate at the eaves. Similarly, when Section R402.1.1 would require R49 in the ceiling, installing R38 over 100% of the ceiling area shall be deemed to satisfy the requirement for R49 whenever the full height of uncompressed R30 insulation extends over the wall top plate at the eaves. This reduction shall not apply to the U-factor alternative approach in Section R402.1.3 and the total UA alternative in Section R402.1.4.

Supporting Statement (including intent, need, and impact of the proposal):

Revised language clarifies how to interpret the "alternative" ceiling insulation requirement. It has come to VBCOA's attention that some code officials have interpreted R402.1.1 as permitting R38 over the wall top plate when using "raised heel" or "energy" trusses, but where R49 could be installed in the interior of the attic where height permits, R49 would in fact be required in those areas. The amendment seeks to clarify that R38 could be used throughout the entire attic, where a full R38 could be installed over the top plate. This approach is consistent with US DOE analysis of heat flow through insulated attics (ca. 1996), accounting for actual insulation thicknesses and framing members. Depending on how this particular provision had been previously enforced, impact may be to reduce overall installed insulation materials in attics with no appreciable difference in heat flow rate through this part of the thermal envelope.

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Name: Bruce Cornwall

Representing: VBCOA Energy Committee

Mailing Address: 302 N Main St., Culpeper, VA 22701

Email Address: bcornwall@culpepercounty.gov

Telephone Number: (540) 727-3444, Ext. 387

Proposal Information

Code(s) and Section(s): VCC (IECC R402.2.3)

Proposed Change (including all relevant section numbers, if multiple sections):

Change Section R402.2.3 of the 2012 IECC to read as follows:

R402.2.3 Eave baffle. For air permeable insulations in vented attics, a baffle shall be installed adjacent to soffit and eave vents. Baffles shall maintain an opening equal or greater than the size of the vent. The baffle shall extend over the top of the attic insulation. The baffle shall be permitted to be any ~~solid~~ approved material.

Supporting Statement (including intent, need, and impact of the proposal):

By changing the word "solid" to "approved" you lower the possibility of having a material installed that may not meet smoke and flame spread criteria. The material would still have to meet the requirement of being not easily crushed.

Submittal Information

Date Submitted: 3/15/12

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Please submit the proposal to:

DHCD DBFR TASO (Technical Assistance and Services Office)  
600 East Main Street  
Suite 300  
Richmond, VA 23219

Email Address: [taso@dhcd.virginia.gov](mailto:taso@dhcd.virginia.gov)

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